EnSight Overview

EnSight is a powerful software package for the postprocessing, visualization, and animation of complex datasets. Although EnSight is designed primarily for use with the results of computational analyses, it can also be used for other types of data.

This document provides a very brief overview of EnSight. Consult **Chapter 1** in the User Manual for additional overview information. This article is divided into the following sections:

Graphical User Interface

The graphical user interface (GUI) of EnSight contains the following major components:

Note: This whole upper level of the GUI is referred to as the "**Desktop**"

Message Area

Information Area Button

Click to see information dialog.

Quick Interaction Area

Interface controls associated with the current feature selected from the Feature Icon Bar.

Main Menu

Feature Icon Bar

Sets the current feature. Click an icon to open the associated Quick Interaction area.

Main Parts List

All parts from your model as well as created parts (*e.g.* clips, isosurfaces) are listed here. Click an item to select part(s) to operate on.

Mode Selection Area

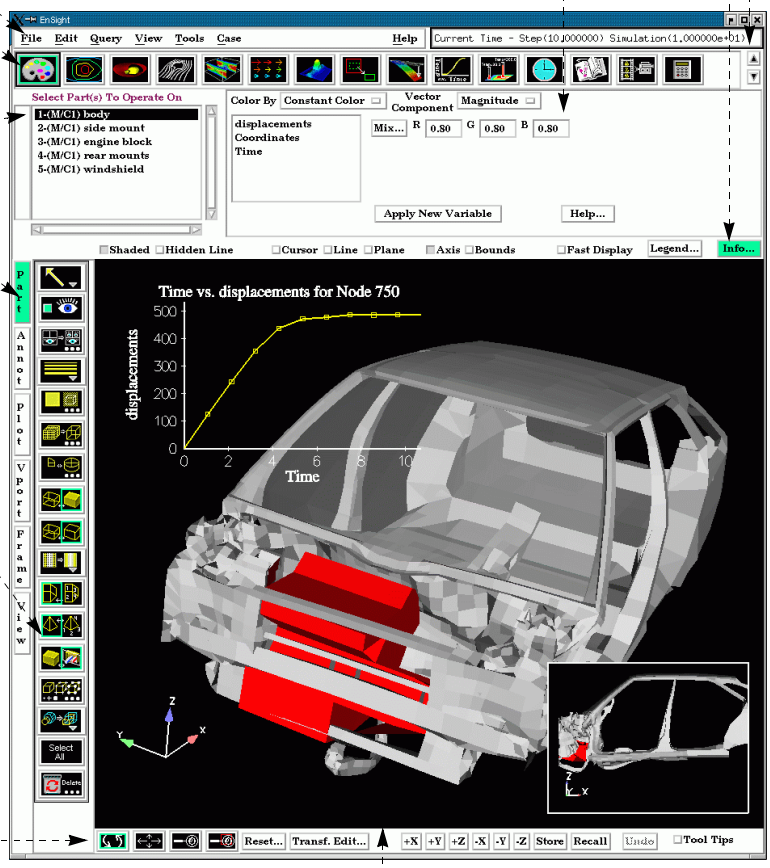
Sets the major mode of EnSight (Part, Annot, Plot, VPort, ...) and loads the applicable set of icons into the vertical Mode Icon Bar. Click the button to select the Mode.

Mode Icon Bar

The set of icons associated with the current Mode. Click the icon to access the function. If Tool Tips are on (bottom right of desktop), the icon's function name will be shown when mouse is over the icon. If necessary, use the vertical scroll bar to access the remainder of the icons.

Transformation Control Area

Buttons that control the current transformation operation (*e.g.* rotate or translate) associated with mouse action in the Graphics Window. Other buttons open dialogs providing detailed transformation control.

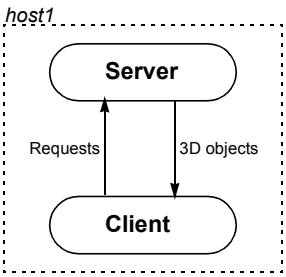


Graphics Window showing inset plot and viewport

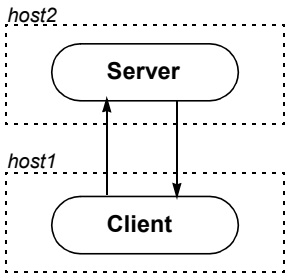
Chapter 5 in the User Manual provides additional overview information on the user interface.

Client / Server Architecture

To facilitate the handling of large datasets and efficiently use networked resources, EnSight was designed to distribute the postprocessing workload. Data I/O and all compute intensive functions are performed by a *server* process. The server transmits 3D geometry (and other information) to a *client* running on a graphics workstation. The client handles all user interface interaction and graphic rendering using the workstation's built-in graphics hardware.



Stand-alone Operation



Distributed Operation

The client and server each run as separate processes on one or more computers. When distributed between a compute server and a graphics workstation, EnSight leverages the strengths of both machines. When both tasks reside on the same machine, a stand-alone capability is achieved. The client–server architecture allows EnSight to be used effectively, even on systems widely separated geographically.

Before EnSight can be used, the client and server must be *connected*. For standalone operation, you simply run the "ensight7" script and the client and server are started and connected for you. For distributed operation (as well as for standalone operation when more control is desired), there are two methods of achieving a connection: a manual connection (described in the Getting Started manual) or an automatic connection (described in **How To Connect Automatically**).

EnSight's **cases** feature allows you to postprocess multiple datasets simultaneously. Cases is implemented by having a single client connected to multiple servers running on the same or different machines.

EnSight's Parts Concept

One of the central concepts of EnSight is that of the *part*. A part is a named collection of elements (or cells) and associated nodes. The nodes and/or elements may have zero or more *variables* (such as pressure or stress). All components of a part share the same set of attributes (such as color or line width).

Parts are either built during the loading process (based on your computational mesh and associated surfaces) or created during an EnSight session. Parts created during loading are called *model parts*.

All other parts are created during an EnSight session and are called *created* or *derived* parts. Created parts are built using one or more other parts as the *parent parts*. The created parts are said to *depend on* the parent parts. If one or more of the parent parts change, all parts depending on those parent parts are automatically recalculated and redisplayed to reflect the change. As an example, consider the following case. A clipping plane is created through some 3D computational domain and a contour is created on the clipping plane. The contour's parent is the clipping plane, and the clipping plane's parent is the 3D domain. If the 3D domain is changed (*e.g.* the time step changes), the clipping plane will first be recalculated, followed by the contour. In this way, part coherence is maintained.

One of the major modes of EnSight is Part Mode. Operations in Part Mode (performed by clicking one of the icons in the vertical Mode Icon bar) operate on the parts currently selected in the Main Parts list. See **How To Select Parts** for more information.

See the **Introduction to Part Creation** for more information on parts.

Online Documentation

Documentation for EnSight is available online. See **How To Use the Online Documentation** for more information as well as hyperlinks to the main documents. Online documentation is accessed from the Main Help menu in the user interface. In addition, major dialog windows contain Help buttons that will open a relevant "How To" article.